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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/596,784

05/09/2007

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EXAMINER

KOSLOW, CAROL M

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

10/23/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/596,784	TAKAHASHI ET AL.	
	Examiner	Art Unit	
	C. Melissa Koslow	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

This action is in response to applicants' amendment of 26 August 2009.

Applicant's arguments have been fully considered but they are not persuasive.

Claim 14 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

This claim is new matter since the originally disclosure teaches that the sintered ferrite body of claim 2, which contains 68-75 mol% Fe_2O_3 , has a maximum magnetic flux density at 100°C and 1 kA/m of 490 mT or more (para [0032]).

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 2004/063117 in view of JP 06-290926.

U.S. patent 7,481,946 is the national stage application for WO 2004/063117 and thus is the translation for WO 2004/063117.

WO 2004/063117 teaches, as shown by U.S. patent 7,481,946, a sintered Mn-Zn ferrite comprising 62-68 mol% Fe_2O_3 , 12-20 mol% ZnO and the balance being MnO. WO 2004/063117 teaches forming this material by adding a binder to the ferrite powder, having a specific surface area of 2700-5000 m^2/kg , molding the mixture and sintering the molded mixture where the sintering process includes heating to remove the binder (temperature increasing process) and then holding the temperature so as to sinter the molded mixture. The oxygen concentration during the whole sintering process is

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preferable 0.5 vol% or less. The taught sintered ferrite has a volume resistivity of 0.13 $\Omega \bullet m$ or more (col. 9, lines 12-13) and a minimum core loss temperature is between 80-120°C (col. 10, lines 10-12). The sintered ferrite can also contain 0.01-0.025 wt% SiO_2 and 0.13-0.25 wt% $CaCO_3$ (col. 9, lines 4-5). The taught sintered ferrite has a relative density that is 95% or more, which corresponds to a density of 4.845 g/cm³ or more. The reference teaches that the sintered ferrite can be used as cores in transformers and choke coils, which are electronic parts comprising a winding and a core made of the sintered ferrite. The taught calcium content, volume resistivity, minimum core loss temperature and density all fall with the claimed ranges. The ferrite composition, the amount of silica and the oxygen concentration taught by WO 2004/063117 all overlap the claimed ranges. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). Also see MPEP 2144.05. WO 2004/063117 does not teach the claimed binder amount, the ratio of Fe^{2+} and the spinelization ratio of the ferrite powder.

With respect to the spinelization ratio, WO 2004/063117 teaches calcining oxides of Mn, Zn and Fe in nitrogen at 800-1000°C, which is the process used by applicants. Applicants teach that this process gives a spinelization ratio range that overlap claimed range. Thus one of ordinary skill in the art would expect that the taught ferrite powder to have a spinelization ratio range that overlaps the claimed ranges, absent any showing to the contrary. With respect to the amount of binder, JP 06-290926 indicates that the conventional amount of binder known to be used to produce Mn-Zn sintered ferrites at

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the time of invention is about 1 wt%, which falls within the claimed range. Thus one of ordinary skill in the art would have found it obvious that the amount of binder added in the process of WO 2004/063117 should be about 1 wt%, since that appears to be conventional amount of binder used to produce sintered Mn-Zn ferrites. Since the composition falls within and overlaps that claimed, the process conditions fall within and overlap that claimed and the properties fall within those claimed; one of ordinary skill in the art would expect that the taught sintered ferrite would have a Fe^{2+} ratio, a maximum magnetic flux density at 100°C and 1 kA/m and a reduction ratio of maximum magnetic flux density from 20-100°C that at least overlap the claimed ranges, absent any showing to the contrary. The references suggest the claimed sintered ferrite, electronic part and method.

Applicants argue that WO 2004/063117 ('117) is silent as to the oxygen concentration in the atmosphere from the binder removing step to the completion of the sintering step, but this is incorrect. The US equivalent teaches in column 12, line 20 through column 15, line 27 and the examples teach that the oxygen concentration during sintering is preferably 0.5 vol% or less, which overlaps the claimed and argued range. Applicants also argue that '117 does not teach the atmosphere at the start of the binder removal step, but as stated in the rejection the taught temperature increasing process reads on the claimed binder removal step and this part of the reference, as well as the examples, suggest an atmosphere having an oxygen concentration of 0.5 vol% or less. As stated above, the Examiner acknowledged '117 did not teach the spinelization ratio of the taught calcined ferrite, but the reference does teach the calcining atmosphere in column 10, lines 31-32. Thus applicant's statement that the reference does not teach the calcining

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atmosphere is incorrect. Applicants' comments with respect to the spinelization ratio are noted but are not convincing since the taught calcining process is identical to that used by applicants. Applicants have not shown that the taught process does not give a spinelization ratio that does not overlap the claimed range. While '117 does not the claimed relationships, the suggested oxygen concentration and binder amount overlap those amounts which result from the claimed relationships. Thus '117 suggests the claimed process even though it does not teach the claimed equations. Applicants have not shown that the taught sintered ferrite does not have a divalent iron content that overlaps that claimed. The attack on JP '926 individually does not overcome the rejection especially since this reference was simply used to teach the amount of binder conventional used to produce sintered Mn-Zn ferrites. The rejection is maintained.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/cmk/
October 23, 2009

/C. Melissa Koslow/
Primary Examiner
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